



# UNITED STATES PATENT AND TRADEMARK OFFICE

NW

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION-NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/011,543	12/05/2001	Michael J. Haji-Sheikh	76183.2200	7728

7590 12/23/2003

Honeywell International Inc.  
Law Dept. AB2  
101 Columbia Road  
P.O. Box 2245  
Morristown, NJ 07962-9806

EXAMINER

AURORA, REENA

ART UNIT PAPER NUMBER

2862

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/011,543

Applicant(s)

HAJI-SHEIKH ET AL

Examiner

Reena Aurora

Art Unit

2862

*MW*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 20, 22 - 33 and 35 - 40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 20, 22 - 33 and 35 - 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- ..... Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This communication is in response to amendment received on 6/25/03.

The applicant has canceled claims 21 and 34.

The applicant has added the new claims 39 and 40.

### ***Claim Objections***

1. Claim 12 is objected to because of the following informalities: In claim 12, steps relating to the making of the product are not provided. Claim 12, depends on claim 1 which is method of using the product. Applicant is suggested to provide the steps for making the product. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Maruo (4,053,829).

4. As to claims 1, 2 and 12, Maruo discloses a device for detecting direction of a magnetic field wherein variable magnetic field is generated by the moving member (13, Fig. 8); and introducing a first bridge (100a, Fig. 9) and second bridge (100b), each adjacent to the moving member (13), the first bridge (100a) and second bridge (100b)

Art Unit: 2862

each comprising a first set of runners (A, Fig. 9) and the second set of runners (B) being electrically influenced by the magnetic field and each bridge generating at least a direct facing relationship signal and a direct transitional relationship signal as the member (13) moves; the second bridge (100b) being located at a distance from the first bridge (100a) such that a phase difference exists between the signals of the two bridges (Column 8, lines 52 - 54); wherein the first set of runners is approximately perpendicular to the second set of runners within each bridge (examiner is interpreting in fig. 9, the top right and the bottom left as first set of runners and top left and bottom right as second set of runners).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 – 11, 13 – 20, 22 – 33 and 35 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruo (4,053,829).

7. As to claims 13, 20 and 27, it has been recognized that claims 13 and 20 includes the elements of claim 1 except that claim 1 does not disclose that the first and second bridges are wheatstone bridges. However, it has been recognized in the art to use magnetoresistors in Wheatstone bridge or bridge configuration so the voltage across the circuit is indicative of the presence or absence of a magnetic component.

Art Unit: 2862

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the device of Maruo with Wheatstone bridge for providing the first and second signals. Therefore, the method and apparatus of claims 13 and 20 are rejected on the same grounds as of claim 1 and above stated rejection (MPEP 2144.03).

8. As to claim 33, it has been recognized that claim 33 includes all the limitations of claim 1. Therefore, claim 33 is rejected on the same grounds as of claim 1.

9. As to claims 3 and 38, Maruo discloses the first bridge (100a) and the second bridge (100b) are substantially aligned in the moving direction of the moving member (123) (Fig. 11 B).

10. As to claims 4, 5, 22 and 35, Maruo further discloses the first set of runners further comprising a first set of resistive elements (A), the second set of runners (B) further comprising a second set of resistive elements (Fig. 9).

11. As to claims 14 and 37, Maruo further discloses first Wheatstone bridge (100a) and second Wheatstone bridge (100b) being fabricated as an integrated circuit (Fig. 11A, Column 9, lines 42 - 49).

12. As to claims 6, 7, 15, 16, 23 - 26 and 36, Maruo further discloses computing means (121) in communication with the at least one of the first bridge (100a) and the second bridge (100b) (Fig. 11B, Column 9, lines 42 - 49).

13. As to claims 8 - 10, Maruo discloses the moving member (123) is moving rotationally (Fig. 11B).

Art Unit: 2862

14. As to claim 11, Maruo fails to disclose the first bridge being Wheatstone bridge and the second bridge being a Wheatstone bridge. However, it has been recognized in the art to use magnetoresistors in Wheatstone bridge or bridge configuration so the voltage across the circuit is indicative of the presence or absence of a magnetic component. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the device of Maruo with Wheatstone bridge for providing the first and second signals (MPEP 2144.03).

15. As to claim 17, Maruo disclose a magnet array (13) in proximity to the first and second Wheatstone bridges (Fig. 7B, Column7, lines 34 - 41).

16. As to claims 18 and 19, the product of claims 18 and 19 can obviously be made by the method of forming as stated above. Therefore, the product of claims 18 and 19 are rejected on the same grounds as of claim 13.

17. As to claim 28, Maruo discloses a ring magnet (13).

18. As to claim 29, Maruo discloses the second bridge (100b) including a third set of runners and a fourth set of runners, the first set of runners and the second set of runners in the first bridge (100a) oriented corresponding to the third set of runners and the fourth set of runners in the second bridge (100a) (Fig. 9, 10).

19. As to claim 30, Maruo discloses the first bridge (100a) being further configured in the same orientation as the second bridge (100b) (Fig. 10).

20. As to claims 31 and 32, Maruo discloses the first and second bridges (14, fig. 8) are placed approximately in a plane parallel to and facing the side of the ring magnet (13) (Fig. 8).

21. As to claims 39 and 40, Maruo discloses determination of direction of movement based on the phase shift between the first output signal (103) and the second output signal (104) (Column 8, lines 52 - 54).

***Response to Arguments***

22. Applicant's arguments with respect to claims 1 – 20, 22 – 33 and 35 – 40 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 703-605-1372. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 703-308-0750. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Reena Aurora



**N. Le**  
**Supervisory Patent Examiner**  
**Technology Center 2800**